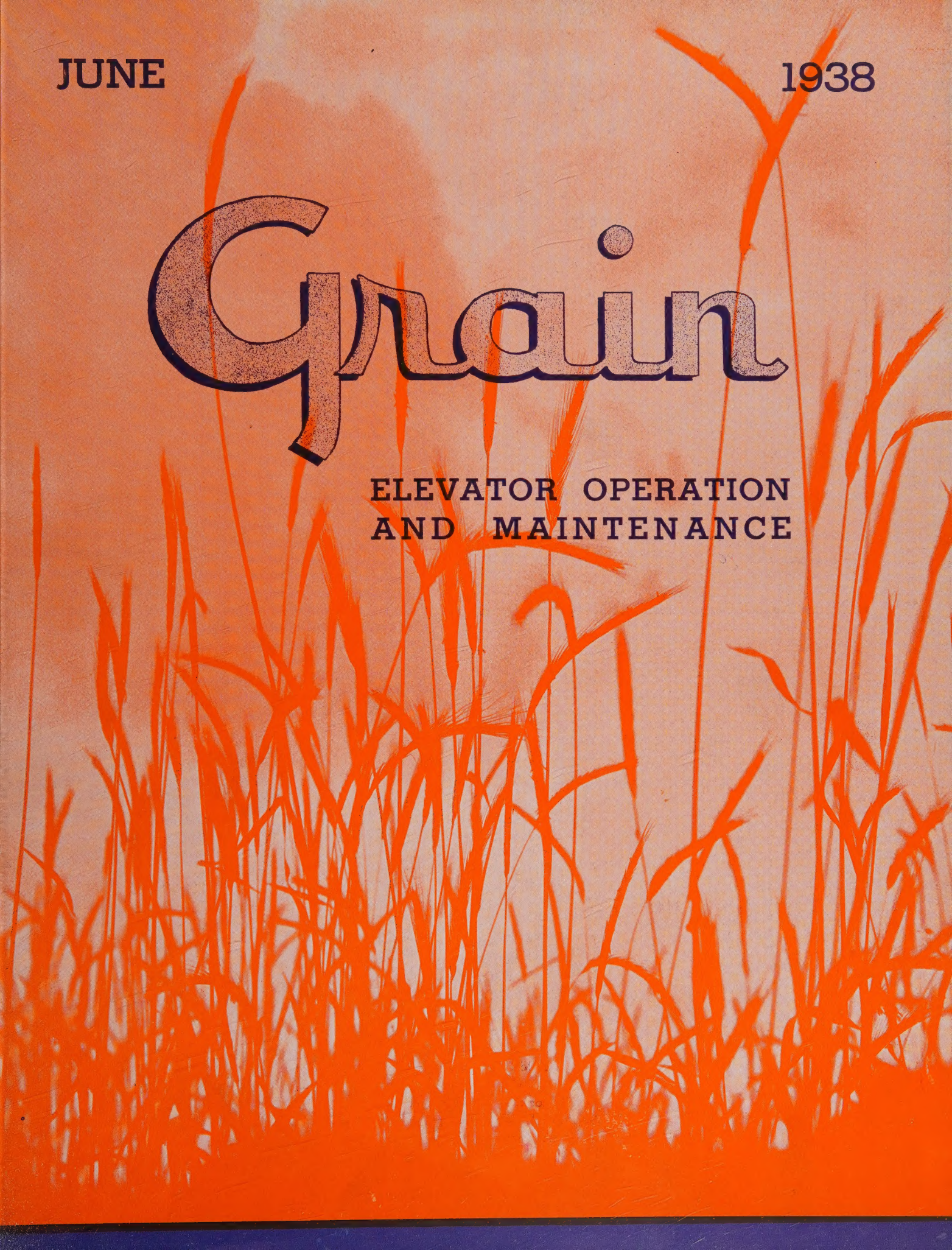
JUNE 1938

Grain

ELEVATOR OPERATION AND MAINTENANCE



To My Successor

Here is a toast I want to drink to a fellow I'll never know.

To the fellow who's going to take my place when it's time for me to go.

I'll wonder what kind of a chap he'll be, and I've wished I could take his hand—

Just to whisper, "I wish you well, old man," in a way that he'd understand.

I'd like to give him a cheering word that I've longed at times to hear.

I'd like to give him a warm handclasp when never a friend seems near.

I've learned my lesson by sheer hard work, and I wish I could pass it on.

To the fellow-man who'll take my place some day when I'm gone.

HE NEVER STARTED TO LIVE

Now it's all very well to stand out alone
To walk by oneself's mighty nice,
To seek not the counsel of other men
Or ask for their help or advice,
To know at the end of each perfect day
That what you have made is your own
That you sow your oats and you sow them alone
And you're willing to reap what you've sown,
Then when you come to the end of the trail
And you feel that you've played out your hand
Just to know that you've played it alone and well
You're willing to let it stand.
As for me, I'd rather be one of a real good crowd
The best old bunch in the town
The crowd who stand one for each other
And all for the chap that is down.
So that when I walk out on the town's main street
Or maybe drop in at the club
I can really feel that I'm one of that crowd
And not just merely a dub
So I can slap Jimmy or Al on the back
And say "Hello there, how's the wife"
And feel that the slap I receive in return
Is not camouflage for a knife.
So it's all very well to say you're self made
And you fight all life's battles alone
And if sometime you make a mistake
You go out alone and atone
But I'd rather know that when
Old man "tough luck"
Had dealt me a stiff uppercut
That old gang would be there with a slap on the back
To help me out of the rut.
For a slap on the back and a hearty hand-shake
Are the best this old world has to give
And any man who has missed them
Might better be dead
For he never has started to live.

Editorial

By SANDY KEIR

GRAIN

BOARD OF TRADE BUILDING
CHICAGO, ILLINOIS
TELEPHONE WABash 3111-2

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OPERATIVE
and
MECHANICAL
PROBLEMS
in
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WHO AM I?

WHO am I?

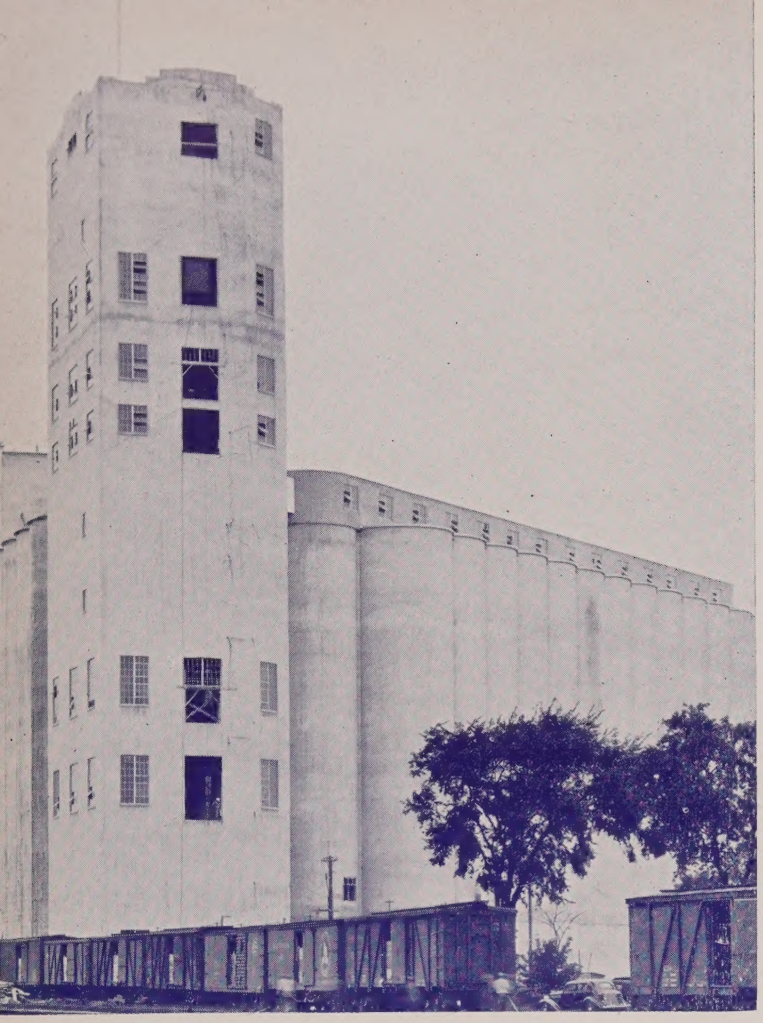
I am Old Man Indifference, alias Carelessness, alias Down Right Laziness. You find me skulking in the shadows of the most modern elevators in the land and you may see me in the lowliest.

I am there only on sufferance. But an astoundingly large number of superintendents suffer me to be within their plants. Slowly and surely I get my task done. No one bothers me and no one cares. . . . That is, they do not become concerned until a mangled body is carried from a work floor, or a purple-black face is lifted lifelessly from a bin.

THEN they care!

They rush around in determined strides and pass mighty resolutions. . . . But I chortle and sneer at these. . . . They cannot cure the crippled limbs nor bring the blood surging back into a clammy cheek. . . . My work is done.

WHO am I? . . . I am Old Man Indifference, alias Carelessness, alias Down Right Laziness. . . .



WHEAT IMPROVEMENT AND LABORATORY CONTROL OF *Storage and Merchandising*

★

by HARRY R. CLARK, Chief Inspector — Weighmaster
OMAHA GRAIN EXCHANGE

★

MY choice of this subject is obvious as it ties in very closely with the duties of an elevator superintendent.

Billions of bushels of wheat have been converted into bread since the Mennonites of Russia gave us Turkey Hard Winter Wheat and the Canadian Government originated Marquis Spring Wheat. For years these two wheats were our principal bread wheats and they are still very fine varieties. However, since their introduction, hundreds of varieties of hard winter and spring wheats have been originated. A very few of these varieties are desirable, a few are good, but the large majority are indifferent bread wheats

Poorer Varieties Increase

During the last several years of drouth, more and more of the poorer varieties have been planted because seed of good varieties has not been available. This condition, of course, was not the mills' liking and something had to be done to correct it. The solution was to organize wheat improvement associations. At the present time in the middle-west we have the Northwest Crop Improvement Association, the Southwest Improvement Association and the Nebraska Wheat Improvement Association. Sponsors of these Associations are: Grain Industry, Milling Industry, Agricultural Colleges, Railroads, Banks, Insurance Companies, Newspapers, etc.

Splendid results have been the answer of this wheat improvement work. These results were accomplished only by a great deal of hard work by the sponsor committees, the retaining of full time men to conduct the work and the expenditure of large sums of money. Some of the activities of these associations are: Better crop special trains; seed treatment demonstrations for farmers; issuing circulars, bulletins and other printed matter conducive to the dissemination of information on crop improvement; sponsoring farmers adoption of superior varieties and distribution of seed. Our agricultural colleges deserve much credit for their work in originating varieties of wheats having resistance to rust, drouth and fly infestation, and much attention has been given by them to the milling value of new varieties. With sufficient rainfall and good growing conditions, there

is no question in my mind that in the next five years a great improvement will be noticed in the quality of wheat.

"Laboratory Control Of Storing And Merchandising."

Prior to 1916, the average elevator superintendent had a pretty soft job, and his general appearance showed it. He was erect of carriage, no lines of worry in his face and not a grey hair in his head. The reason for this self-satisfaction and well being, as some of you will remember, was the grain standards in effect at that time.

Number One Hard Winter Wheat: Shall include all varieties of hard winter wheat, sound, plump, dry, sweet and well cleaned and weigh not less than 61 pounds per bushel.

Number Two Hard Winter Wheat: Shall include all varieties of hard winter wheat of both light and dark colors, dry, sound, sweet and clean, and weigh not less than 59 pounds per bushel.

Number Three Hard Winter Wheat: Shall include all varieties of hard winter wheat of both light and dark colors, not clean or plump enough for Number Two and weigh not less than 56 pounds per bushel.

Number Four Hard Winter Wheat: Shall include all varieties of both light and dark colors. It may be damp, musty or dirty, and weigh not less than 50 pounds per bushel.

That was the extent of the numerical grades prior to 1916, so you can readily see why an elevator superintendent at that time had very little to worry about.

Well, along came 1916, and with it came the U. S. Federal Grain Standards. Superintendents as a whole didn't care much about this change, because it meant the scrapping of their routine of handling wheat. The new standards meant definite limitations for moisture, foreign material, test weight, damaged, dockage and varieties. Many of us thought the new grades would prove impractical and pass out of the picture, but they were here to stay. Everybody wrestled with them, made a lot of mistakes, but finally conquered them—but at a cost!: no longer was the superintendent's brow free from worry, his carriage quite as erect, or his hair free of grey.

Couldn't Happen, But it Did!

They went along for a few years and were beginning to think the world was a good place to live in. Then rumors were heard that the millers were paying a lot of attention to protein content and were going to buy wheat on that basis. Surely *this* couldn't happen; but it did. Early in the 1920's the Kansas State Grain Inspection Department installed a protein laboratory, then the Missouri State Grain Department, the Omaha Grain Exchange in 1924 and in 1926 the Minnesota State Grain Inspection Department; soon it was universal.

The superintendent found he had a real problem on his hands when he had to bin wheat according to protein content along with other grading factors. This problem was of course solved and a good job was done in handling wheat the new way. Of course this new idea further increased the lines in the superintendent's brow, accentuated the stoop in his shoulders and the grey was quite noticeable in his hair. Grain Standards in the passing years have been changed at intervals, usually tightening the limitations—always making your job a little more difficult.

Crumb Texture; Volume

During the past few years the public has become more critical about such things as color, crumb structure and volume in a loaf of bread. The bakers in turn have been more critical and exacting when purchasing flour. The mills, of course, had the problem

AN ESSENTIAL TO RECOVERY

The first sign of recovery will come when industrial strife dwindles to negligible proportions and industry can get down to its serious business of production and providing jobs, in the opinion of Gustav R. Stahl, Director of Industrial Relations for J. T. Trenholm & Company.

Computation by this source reveals that in 1937 industrial disputes broke all records for the number of man days of work lost, caused a direct wage loss of more than $140,000,000 to the workers involved, and had an important effect in reversing the upward trend of industrial production.

Summarizing the results of industrial strife throughout the nation during the past year, Mr. Stahl writes:

"Industrial strife effects its toll just as does war between nations. Not only are the treasuries of the struck corporations effected, but the accompanying loss of wages has a depressing effect on consuming power in the localities affected. Fears of various kinds engendered by ever-increasing strife exert an even more powerful depressing influence."

According to this source, man days of work lost through strikes during the first ten months of 1937 totaled 26,617,000.

dumped into their lap and proceeded to do something about it. Their scientists and chemists started to devise ways and means of finding out more about the wheat they were buying and grinding. A dough recorder was invented, which measures mixing tolerance and the optimum mixing time of doughs. This dough recorder also does a good job of indicating varieties of wheat. Then there is the pressure meter which measures the sugar content of flour and thus indicates the sugar formula. Varieties having high gassing power will be the natural choice of the millers.

This research work done the past few years has made the miller a more critical and exacting buyer than ever before. So it is not surprising that during the past year or so there has been an increasing amount of wheat purchased by mills on a complete milling and baking analysis. These analytical purchases have been numerous in our market, and I am sure that is true in other terminals. The demand for milling and baking analysis became so strong in our market that our Directors appropriated $5000 for the installation of a complete milling and baking laboratory. When the new crop moves we expect to operate this laboratory to capacity.

New Responsibility for Supers

In my opinion superintendents will have additional responsibilities on their shoulders for, in addition to the factors now involved in the binning of wheat, you might well expect the factors: ash, gassing power, mixing tolerance absorption, fermentation, oven spring, loaf color, crumb color, etc.

Milling wheat, merchandised on laboratory reports, has its compensation however, as the grain man will be able to sell at a better advantage, the miller and the baker will be able to make a better product, and the elevator superintendent will broaden his education and become a still more valuable employee to his firm.

Perhaps the binning and merchandising of wheat on analytical reports seems far fetched, but I sincerely believe milling wheat will eventually be purchased to a large extent on laboratory tests. Don't let what I have said worry you too much, for when the time comes you will take this problem in your stride like you have conquered the many complexities of the past.

In closing, let me compliment the elevator superintendents of North America for the very efficient manner in which they have handled a very difficult job.

★

Casual as the slipping away of the years . . .
Life is a continuous lesson in humility.

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DOES CORN REALLY HAVE ENERGY?

Here is an Associated Press picture of a piece of cornstalk which was driven through a shingled wall during a tornado which struck Belleville, Illinois, last month.

Brady Brewer, owner of the house, inspects the phenomenon, and doubtless would much prefer to witness demonstrations of the energy of corn out of a can of corn syrup.

FIRST COMPENSATION AWARD FOR LUNG DAMAGE

For the first time in history the U. S. Employees' Compensation Commission awarded compensation to a grain worker for a lung injury suffered from inhaling grain dust, states a dispatch from Buffalo. Physicians testified the scooper in question contracted pulmonary fibrosis—hardening of lung tissue.

An investigation of lung damage and other injuries arising out of such exposure is reported under way by the New York State Labor Departments Division of Industrial Hygiene.

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MOISTURE IN GRAIN *and* MOISTURE TESTING

by MR. T. C. MANNING

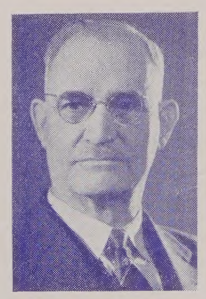
Uhlmann Grain Company, Kansas City

Moisture content of the grain being graded for storage is the most important of the grading factors. There are several machines on the market for determining the moisture content of any and all grain. On any one of them we may be using at the elevator, you cannot be sure that your results will be the same as those obtained at the destination point. It sometimes makes the superintendent cuss a little when the returns come back and they tell him that he is all wrong.

If you can look back, say 25 years, we can realize how much better off we are now than we were then. We used to feel of the grain, crack it with our teeth, or dig the germ out of the corn with our thumb nail, and try to tell ourselves how long the grain would store without going out of condition. I must admit that we did some mighty poor guessing. I refer to the intermarket determinations.

Variables

The temperature and the humidity of the atmosphere where the sample is drawn affects the results, so is not always a true determination of the actual moisture content of the grain in the car or bin. Of course, in matters of this kind, we always have the human element. Sometimes the causes for variable moisture-tests results on any of the moisture testers are failures on the part of numerous operators either to maintain moisture testing equipment in a properly standardized condition, or to operate the devices in strict accordance with the prescribed instructions. This applies to all moisture testing equipment.



T. C. MANNING

Results obtained on a sample drawn from a car in Omaha or Minneapolis in a temperature of 30 to 40 degrees will not check with a sample drawn from the same car at Galveston or New Orleans in a temperature of 80 to 90 degrees. The chart will give you the temperature correction, but the cold grain coming out into the warmer atmosphere creates moisture on the surface of the grain and this affects the results as compared with the test made at the former market.

Just Like Your Specs

To illustrate more clearly: In the Spring, before the warmer weather has affected the grain in the bins, we find that we lose from one half to one pound in test weight when loading out. This loss in test weight is caused by the accumulation of moisture on the surface of the grain—the moisture being drawn from the air—when the cold grain is run out in the warmer atmosphere. This condition is nicely demonstrated to any one wearing glasses when he steps into a warm room on a cold day—the moisture will form on the glasses to such an extent that he cannot see through them.

The same conditions exist with a sample of grain drawn from a car on a cold day and taken into the warm sample room. When should the moisture test be made? As soon as the sample reaches the sample room? Or should the operator wait until the sample warms up to the temperature of the sample room? . . . The latter takes considerable time.

Collective Efforts Suggested

There is no doubt that the conditions referred to are responsible for a large portion of the differences in the intermarket determinations. This is no criticism on the moisture testing machines. They are very accurate under most conditions and a wonderful improvement over the old "teeth and thumb nail" method.

What we are trying to attain along this line, as well as others, is as near perfection as possible in the delivery and care of the grain entrusted to our keeping. The improvements along this line and many others are up to the individual and collective efforts of the superintendent.

Cleaning Grain

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By H. L. HEINRIKSON

Terminal Grain Corporation, Sioux City, Iowa

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ALL of us who are associated with the grain industry try to keep abreast of the times so as to be familiar with the modern methods of cleaning, grading, and processing in use today. However, the territory represented by those attending this convention nearly extends throughout the length and breadth of this continent, and obviously the conditions and problems confronting this group in the marketing of grain must vary considerably. We, as a group, should have much to gain in talking over many of our specific grain processing problems. What is common practice to some may be just the information needed by others. Some of us know that during the past few years particularly, we have had requirements in the cleaning and processing of grain quite new to our elevators, and I for one, would like to learn more about their solution. If this paper will serve to open up the subject for general discussion, then it will have well served its purpose and we will all benefit immeasurably.

Complex Requirements Today

Looking back over the history of grain cleaning we find that the statement "necessity is the mother of invention" can well be applied to the evolution of grain cleaning. We can truthfully say that the present complex requirements of the modern terminal elevator for the handling and processing of grain were not necessities to the ancients. We find that our Egyptian friends had a very simple way of cleaning grain. They simply threw the grain in the air and let Mr. Wind do all the work that was necessary. In those days grain mixtures and weed seed contamination were little known, but in a later era of the history of grain cleaning, we find that Nature began to make it more difficult for man to properly prepare his grain for food. Weed seeds became more and more a factor and as the demand for cleaner grain increased, man

H. L. HEINRIKSON

resorted to his wits for the development of a mechanical means for cleaning the grain.

About 2,000 years ago hand sieves made of horsehair were used by the Gauls who then tilled the soils of what is now France. From then until 1775 little development seems to have taken place. At that time a man named Gooch, then living in England, invented a machine in which he combined artificial winds by means of the rotating fan, and the shaking riddle of ancient Gaul. After that the development of this type of equipment made greater progress. It is interesting to note that one of the early patents on a fanning mill in the United States was taken out in about 1829. Following that was the development of the rolling screen which was used to a great extent in the milling industry during the past century.

Indented Cylinder Old

In delving back into this history we are surprised to find that the first indented cylinder machine was patented about 1880—a little over fifty years ago. It was used to remove cockle from wheat and was therefore known as the Cockle Cylinder. It seems peculiar that this early indented cylinder was not improved upon or extended in its possible field of service for nearly forty years after its development.

At the turn of the century, the mechanical engineer began to take a real interest in grain cleaning machinery and, like in other industries, the past twenty-five years has seen greater development in the construction and refinement of grain cleaning and grading machines than in any period of history. I think that the statement quoted in the early part of my paper—"necessity is the mother of invention"—can be aptly applied here because as I look back over the past few years I can see that our grain cleaning and grading requirements have become more complex year by year and as usual man's ingenuity has come to the rescue of the industry.

Varieties Multitudinous

Perhaps it would be well at this point to discuss some of the problems we are confronted with in the cleaning, grading, and processing of grain in our elevators. If it were not for the score or more varieties of hard spring wheat now being grown throughout the spring wheat belt of the United States and Canada, our problem would be confined to the removal of dockage. Many of these spring wheats have radically different milling and baking qualities and when mixed with themselves, or with any of the ten varieties of durum wheats grown in the same territory, the mixtures become a serious problem for the market. Here again "necessity becomes the mother of invention." The pocketed disc and the improved indented cylinder can, when there is ever so slight a difference in size, by length or width, separate one variety of wheat from another. Many different pockets have been developed to meet exacting requirements of separations, extending throughout a wide range, from the smallest grass seed up to include the coarsest grain.

Other small grains, such as barley, oats, rye, and flax, grown in both spring and

winter wheat territories, present still more complicated requirements in the cleaning and processing of these grains. Therefore, the terminal elevator man can well say that he does not lack for problems in the cleaning and grading of grain.

Separations by length, by width and by air are the three fundamental principles employed in our modern grain cleaning machinery. They are far different looking machines than those in common use twenty-five years ago. At first they consisted of a special machine designed to meet a specific need and were not always adaptable for other problems of separation. Little by little they were improved and adapted for more general-purpose use until today with one of these modern general-purpose grain separators, the terminal elevator man can scalp, aspirate, clean and grade wheat, rye, barley, oats, soy beans and corn without change of mechanical equipment. They have surprisingly good capacity, occupy small floor space and require low power consumption.

Challenge Ingenuity

The general drouth throughout the Northwest during the past few years, created unusual conditions which challenged the ingenuity of the best grain men and engineers of the country. Nearly all small grain that could be harvested at all, contained a very high percentage of light shrunken kernels. The problem was how to analyze that grain as it came to market, and determine what portion of the thin kernels should be separated out so as to improve the market value of the portion salvaged. There was little difference in weight and size of the kernels to be salvaged and those to be rejected. Most of the grain cleaning machines which had been used for years to remove thin grain proved either too wasteful of what must be considered good grain, or when adjusted or modified to accomplish the desired accuracy, were very low in capacity.

These conditions created a demand for a general purpose grain grader. That is a machine which could grade any of the small grains by width of kernel and do it accurately at good capacity. Many of the old forms of graders were improved and many new types have been tried with more or less success. It is hard to predict, at this time, which type will survive, but there is no doubt that we, in the grain trade, now have a new tool with which to process the grain of the future. It is for us, and those who process grain into the many forms of food products, to learn how to use this new tool — the "width grader" — most efficiently. Here again the old adage rings true, "necessity is the mother of invention."

Drouth vs. Weed Seeds

Fortunately, during these drouth years, weed seed dockage in the grain has not been a serious problem. Some have expressed the thought that we might not be troubled with these pests in the future as much as we have been in the past. In order to answer this thought, and predict the conditions of the future, we must again return to the history of the grain industry.

During the rapid expansion of grain production in North America, new fields of virgin soil were continually being added as farm land. There were few weed seeds in these fields and for a number of years, the grain sent to market contained so small a percentage of weed seed that cleaning grain for weed seed removal was an easy task and could be done at high capacity.

During the past forty years, considerable attention has been given the subject of "weed seed contamination of our grain fields" by agriculturists. They have found that many farm lands in the spring wheat territories contain over 100 different species of weed seeds and that today in many of these fields, one square foot of soil five inches deep may contain over 4000 weed seeds. Check-ups have shown that these fields contain over 180,000,000 weed seeds per acre. Wheat is sown at the rate of slightly less than 1,000,000 kernels per acre. The ratio of weed seeds in the soil to wheat planted may be about 180 to 1.

50% Grow After 20 Years

In 1902 the Virginia Agricultural Experiment Station began a test to determine how long weed seeds could be buried in the soil at plowing depth and yet grow when brought near enough to surface for proper germination. They found that after twenty years, at least fifty per cent of the original seeds would still grow. It is evident that weed seed contamination of grain will still be with us when favorable weather conditions for their propagation returns. Some of the winter wheat areas of the South and the irrigated grain territories of the West have recently been troubled with weed seed dockage in their grain. Each year finds some new weed specie harvested with the grain. It appears that in some of these areas the weed seed dockage in their grain to be marketed

may approach the conditions we have experienced in the spring wheat belt.

With the modern grain cleaner, the removal of most weed seed dockage, with low grain shrinkage, is not a serious undertaking. Some mixtures of certain kinds of grain and weed seeds require special machines and careful attention in order to prepare that grain for some particular food product.

On the other hand, it is very hard to talk on cleaning without mentioning cleaners and types of cleaners. I have mentioned the indent types which are almost human, they make as many as five complete separations.

Then we have the shaker types. I know that there are a great many of these machines in use today, which still do a fair job, but could be improved by the installation of a Buhler drive.

Drives Eliminate Vibration

These new drives eliminate practically all vibration. They intensify the screen action, produce a smooth lateral motion which creates a closer and more exacting separation, and entirely eliminate that jumpy action heretofore created by eccentrics which causes the straw joints and foreign grains to tip up and go through the perforations with the good grain.

Then we have on the market a new type of needle machine with motor driven brushes which increases the cleaning capacity immensely.

I, for one, am facing the future with confidence that whatever the grain cleaning problem may be, it will not take long for our present aggressive grain cleaner manufacturers to solve that problem and bring forth a new machine, or a combination of existing machines, which will ever have a broader field of usefulness, and yet do many specific tasks better than ever before. Our hats are off to them for their co-operation and untiring efforts in our behalf.

DRAMA OF GRAIN

By CALEB of Marshall Field & Company

A few days ago I leaned over and peered long and thoughtfully at a spattered handful of wheat on a table.

As I looked, I think I felt a little as Benjamin Franklin must have felt when a dribble of crotchety energy running down a kite string identified itself with the almighty thunderbolts Jove lets loose in the sky.

This little handful of grain, I thought, is linked compellingly with the big story of man down through the ages. Wheat! Grain!

For these small grains, hungry hordes from the hills in ages gone have harassed plainsmen. For these small grains, wars and battles have been fought, economic convulsions and panics have been experienced, new industries have been set in motion and famine has been undergone. For these small grains have dust bowls and floods been suffered, tariffs and imposts been imposed, legislative reforms been attempted, political expediences been tolerated, diplomacy and intrigue been drafted.

Wheat, corn, oats, rye—"What price?" "How much?" Questions daily on a million or more tongues—in the cold vastnesses of the North, in the tense concentration of Europe, in the steaming tropics, in the towns and cities of this broad land—everywhere!

With these pictures of man's background of grain running through my mind, I stood long on the trading floor of the Board of Trade. I watched the frenzy and heard the bedlam of members in their erratic ensemble of market making. No man of these six hundred energetic, nerve-like individuals can materially influence the markets of the world. But collectively, after nature and legislation have done their all, the orders these men execute from everywhere convert all the influencing factors into definite prices.

In a single day 269,000,000 bushels of grain have been traded. Wires go out fan-wise over the country to inform the hinterlands of the world's interest in wheat from minute to minute and day to day. Here the price of wheat or corn trembles on a sensitive and mercuric balance. And yet a balance so stable and fundamentally founded that the golden granary of the earth has its final say over the voices of a hundred—or ten thousand—men.

This seething scene from the drama of the wide-world's food is worth a visit, for no other institution has more far-reaching influence or is more interesting and colorful.

BUSINESS IS GOOD!

Business good? You betcha! Look at the official comparative carloadings of grain and grain products for weeks ending:

	1938	1937
Jan. 1	28,991	25,747
Jan. 8	39,672	29,860
Jan. 15	42,393	31,482
Jan. 22	36,151	29,514
Jan. 29	31,611	29,607
Feb. 5	32,282	28,211
Feb. 12	32,256	29,598
Feb. 19	31,774	29,458
Feb. 26	30,215	27,342
Mar. 5	33,039	28,230
Mar. 12	31,429	28,387
Mar. 19	30,452	29,779
Mar. 26	37,898	27,779
Apr. 2	31,571	31,683
Apr. 9	28,781	29,241
Apr. 16	31,215	29,113
Apr. 23	32,763	27,730
Apr. 30	35,338	27,459
May 7	32,549	27,093
May 14	32,226	26,476
May 21	32,160	25,705
May 28	33,344	27,262
June 4	26,332	22,124
June 11	30,184	27,160

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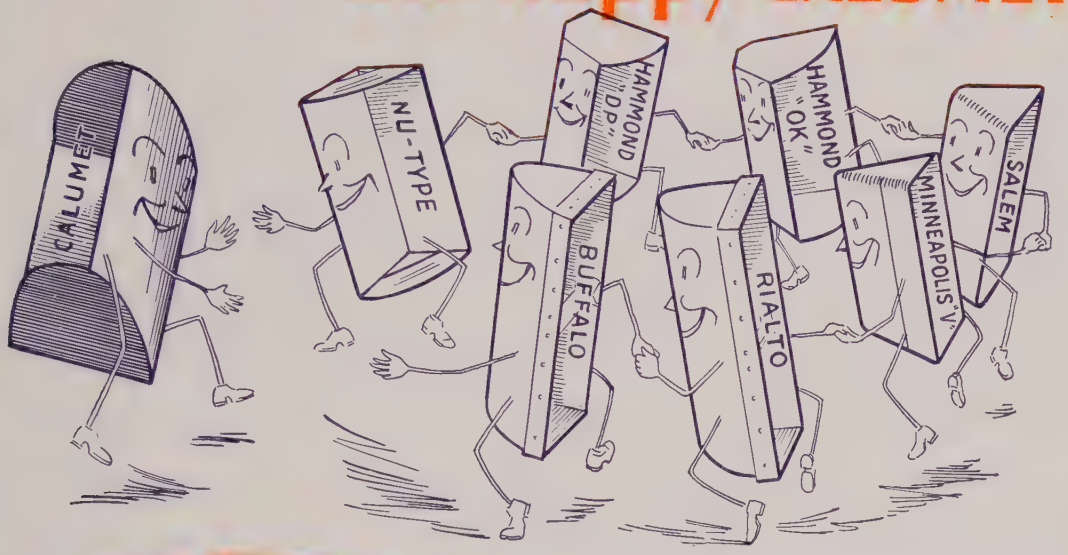

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Noted for its highly efficient pick-up and clean discharge of grain and similar granular products, at any practical speed, the *Calumet Bucket* is truly an important item in our large line of Elevator Buckets and is worthy of carrying our *Trade-Name.*

It is designed for varied operating conditions to fit any elevator in service and will give noticeable increases in capacity as compared with your present buckets *without any change in spacing, speed* or *head* and *boot alterations.*

If minimum spacing of Calumet Buckets on belt for a given size, as recommended by us, is adopted, your present capacity can readily be doubled without increasing belt speed.

Calumet Buckets can also be operated at vastly increased speeds, as compared with other types of buckets, with corresponding increases in capacity. It is well to always secure recommendations from us or our authorized dealers when unusually high belt speeds are desired, inasmuch as changes in head design are sometimes necessary.

STOCKED BY AUTHORIZED CALUMET BUCKET DEALERS

The popularity and widespread demand for Calumet Buckets has necessitated large stocks to be carried at strategic locations in order to serve you better. Call on these authorized Calumet Bucket dealers for ***prompt shipments*** and full engineering information.

The Riechman-Crosby Company,
Memphis, Tennessee

Munson Mill Machinery Co.,
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Puritan Manufacturing Co.,
Omaha, Nebraska

The Strong-Scott Mfg. Co.,
Minneapolis, Minnesota

White Star Company,
Wichita, Kansas

B. F. Gump Company,
Chicago, Illinois

Essmueller Mill Furnishing Co.,
Kansas City, Missouri

Essmueller Mill Furnishing Co.,
St. Louis, Missouri

Great Western Manufacturing Co.,
Kansas City, Missouri

Write for full information and recommendations to solve your particular capacity problem or for a copy of our CALUMET BUCKET ENGINEERING BULLETIN.

Screw Conveyor Corporation
707 HUFFMAN ST. HAMMOND, IND.
SCREW CONVEYORS CALUMET ELEVATOR BUCKETS
TRADE MARK REG. U.S. PAT. OFFICE

For best results in elevating flour and soft stocks, use Nu-Type Flour Mill Elevator Buckets. Request application Data Bulletin.

Teaching the New Employee

By DEAN KEEFER

Director, Industrial Division, National Safety Council

Every worker who comes into an industrial organization to perform a job which he has not been doing regularly presents a problem which must be solved by that man's foreman. The new man must be taught how to do his job efficiently, and without injury to himself or to others.

Before starting the teaching process, there are several important things which the foreman will want to check.

(1) Is the right equipment available?

(2) Is the equipment guarded and in a safe condition?

(3) Is the method of operation correct? The foreman must be absolutely sure about this. If the job technique isn't right the quality and quantity of production are bound to suffer, and the man sooner or later is almost sure to be injured.

After these three preliminaries have been checked, the foreman is then ready to start the real business of teaching. This involves at least four steps:

1. Tell him.
2. Show him.
3. Have him practice.
4. Watch and check him (supervision).

It is never sufficient simply to *tell* a man how to do a new job. Most of us forget a great portion of the things we hear. Telling, therefore, should be supplemented by *showing*.

It has often been said that experience is the best teacher. Certainly in work such as this, the teacher should use this method of letting the student practice the job, thus clinching in his mind the things he has heard and seen. This step serves as a check on both the foreman and the man. If the man does the job correctly, the lesson has been well presented; if he doesn't do it correctly, the lesson has failed to register.

Watching and re-checking the man through careful supervising constitutes the final step in teaching a man a new job. This step is never-ending and is necessary, not only to make sure the man remembers what he has learned, but also to see that he does not get into trouble through experimentation or efforts to establish short-cut methods.

Unfortunately many foremen who are successful in every other respect, frequently fail as teachers—particularly when two or more new men come into their departments at the same time. Quite often, a

(Concluded in second column of facing page)

Stepping up Car Unloading

At times a fellow will stick his neck out too far and somebody will chop it off. Just at the moment I feel I am one of those victims. For some time I have had an idea in my mind of an automatic grain shovel puller, and I possibly have made the mistake of expressing this to several of the men in our association —and that is where I stuck my neck out. Consequently, I have been delegated to try to explain just what my ideas are.

All of you are familiar with the Clark-type of automatic grain shovel, which is manufactured by a number of factories throughout the country. This is recognized as the standard shovel puller throughout elevator trade. I feel there are a number of weaknesses in this type of puller. In the first place, the men have to climb through the grain to drag the shovel to the back of the car. After reaching the back of the car the men have to pull their cable out far enough so that there is a considerable pause before the shovel starts working. If the pauses were multiplied over the period of a day's work, the time wasted which could be used for actual shoveling would be surprising.

JACK COUGHLIN

In addition, the jaw couplings on the puller contact with quite a jar which is not only annoying, but is of considerable shock to the drive and the rest of the equipment.

Explains His Ideas

What I have had in mind is building a puller of similar type, but, instead of using the jaw coupling, using a friction clutch of adequate size to handle the shovels at the slow speed. The friction clutch would take all of the jar out of the pulling mechanism. It would also be possible to have a double drum with one cable running over the top and the other under the bottom. By the use of a boom that, either by telescoping or any other better method, could be extended to each end of the car, there could be a shovel with wider dimensions operated on the order of an ordinary drag line used for excavating, which would operate through the double drum, one drum pulling the shovel into the car and when reversing, the other drum would pull the shovel to the car door. In this way it would not be necessary for a man to get inside the car until it were within 80% to 90% of being cleaned out; in other words, the sweeping out or cleaning up.

However, what I am up against is what the average person is with an assumed good idea. There are some details that are a little hard to accomplish. In this case it is the telescoping boom, so that it does not take up too much room and is not too hard to get in and out of the car. Also, we all know that in a good many elevators they are pinched for room at the unloading point, and it might be that it would be almost impractical to work anything like this out on some of the jobs.

At any rate, my object in presenting this is that some of you may have just the idea in your own mind as to how this could be accomplished. If so, it is something for us to work on together—and possibly we can work something out that will help all of us. If we can, it would certainly please me to know that I have had one idea that has been of help to my brother elevator men.

TEACHING THE NEW EMPLOYEE—

Continued from preceeding page

foreman will succeed with the first man in each group, but when he gets to the second man or to the third or the tenth, he becomes tired of his "lines." The repetition gets monotonous and loses its punch. He loses sight of the fact that success as a teacher, like that of an actor, depends upon one's ability to be just as convincing in the second or tenth performance as in the first.

Experts agree that the best teaching is done by those who present their subjects from the positive rather than from the negative point of view. That is, the best teachers place the greatest emphasis on "what to *do*," rather than on "what *not* to do."

Many foremen fail to realize how easy it is for the superintendent to check up their ability as teachers. Most accidents result either from unsafe conditions or unsafe practices. And every time a foreman states that "the man was injured through his own carelessness or thoughtlessness," he, in a sense, condemns himself as a teacher. The successful foreman-teacher causes his "student" to learn correct and safe habits and to *think*. So if a worker is injured through carelessness or thoughtlessness, it is obvious that he did not develop the safe habits which the foreman tried to teach him.

The
HARVEST IS REAPED
By Advertisers
IN "GRAIN"

CHAPTER SETS ATTENDANCE RECORD

Paul Christensen of the Monarch Elevator Company, Minneapolis, is the new head of the Minnesota Chapter of the Superintendents' Association, succeeding Jack Coughlin of Brooks Elevator Company. Mr. Christensen, a director this past year, heads the new slate installed at the May meeting of this Chapter, which gathering set a new attendance record of 103. The Hart-Carter Comwere hosts for the evening, and escorted the assembly through their interesting plant.

George Dunkelbeck, also of Monarch Elevator Company, at the same time became the new vice president, succeeding Malcolm M. Noxon of Ralston-Purina Company — who becomes Secretary. Mr. Noxon succeeds E. J. Raether, now National President. New Directors and Committeemen have not been announced as yet.

McElliott Speaks

Tom McElliott, Manager and Buyer for the Rahr Malting Company, opened the evening's program with a discourse on buying barley which, with the questions that followed, proved most enlightening.

Vic Reid spoke on behalf of the Hart-Carter Company, welcoming the Chapter to their plant.

M. M. Noxon spoke on entering the Safety Contest.

E. J. Raether, National President, said: "I want to speak about buying yourself a membership in the most progressive association on the continent," and he promptly was awarded with four new memberships.

Joint Picnic at Duluth

Following their June 28th meeting at which Social Security records and Minimizing Injuries will be the main topics, a picnic with the Fort William-Port Arthur and Duluth-Superior boys is planned at Duluth.

NEW MEMBERS

By Gil Lane

While our New Membership Committee hasn't hit its stride as yet, nevertheless we are happy to report these welcome new members since the adjournment of our convention, namely:

397 — A. C. Johnson, Kansas Elevator Company, Topeka, Kansas, and 398 — Oscar Bergsmark, Ladish-Stoppenback Malt Company, Jefferson Junction, Wisconsin.

Reinstatements

8 — E. R. Anderson, Midwest Elevator, Norris Grain Company, Chicago.

Transfers

343 — From Milton Wittig to E. B. Enger, International Milling Company, Buffalo.

ON LEG BELT FASTENERS

"We find that medium size and medium weight leg fasteners work the best for us," says George Dunkelbeck of Monarch Elevator Company, Minneapolis, "and we're wondering what experiences others have had along this line?"

TOO YOUNG TO CREAK

There is still plenty of life in some of the oldtime elevators as proved by Bartlett Frazier's Wabash Elevator in Chicago. Erected in 1881 of wooden crib construction, this house stepped right along in Chicago's overwhelming corn parade of last month.

A dozen cargoes steamed Canadaward from its venerable dock, and on one day two vessels, JUDGE KENEFIC and SHELTON WEED, nosed in, took full cargoes, and were on their way in five and one-half hours. Director H. P. W. Keir is Super of this 1,500,000 bushel plant and sets a lively pace for younger and modern houses.

AWAY BACK WHEN . . .

Remember 'way back when the Chicago Superintendents' Chapter was the only one in existence and President Gassler was referred to as "Head Pulley," Vice President Luff was dubbed "Rope Drive," Vice President Frank Smith was "Screw Conveyor," Vice President E. G. R. Peterson was "Foot Pulley," Secretary Frank Byrnes was the "Aspirator," and Treasurer Sayre was referred to as the "Dust (or was it Dues) Collector." Enuf, enuf for now

AULD NEW CHICAGO HEAD

James Auld of the Northwestern Malt & Grain Company was elevated to the presidency of the Chicago District Chapter of the Elevator Superintendent's Association at their June 14th meeting. He succeeds Jack Waterbury of Stratton Grain Company.

C. J. Alger, Chicago Office Manager of the Corn Products Refiining Company, succeeds Mr. Auld to the vice presidency post, and Bernie Kline of Hales & Hunter succeeds Emil Buelens of The Glidden Company to the Secretaryship.

New Directors include: Bill Husband of E. R. Bacon Grain Company, John Hall of Washburn Crosby, Walter Nowak of Vitality Mills, Barney Weller of Weller Metal Products and H. G. Onstad of James Stewart Corporation.

Associates Night

In addition to the annual election, this occasion also embraced "Associates Night," at which Barney Weller acted as Master of Ceremonies supported by Bill Gassler and Bill Kent. A 3-piece orchestra, direct from Broadway, supplied the rythm for the singing. The program was most entertaining.

Explains Adulterated Corn

Mr. Robert Mill of the Federal Grain Supervision Department enlightened his audience on the adulteration of corn under the Food and Drugs Act, relieving the minds of his attentive listeners when he declared that 25% damaged discolored or heat-damaged grain was the beginning mark for government interference. "We will not interfere with the movement of grain just on the verge of going out of condition," he said in response to a request from Earl R. Evans of Evans Elevator Company of Champaign, for a finer-drawn line.

The river is far too slow for handling grain, particularly the ultra-perishable winter-shelled corn, in the opinion of the majority.

★

OLD LOGIC

Said Simple Simon
To the pie man,
"How do you sell your Pies?"
"I make the best
By every test . . . .
And then I a-d-v-e-r-t-i-s-e."

HOW WINNERS WIN --- AND WHAT FOR

By EMIL BUELENS, Glidden Company, Chicago

Prior to the safety contest at our Plant, which started on June 1, 1937, we had some bad experiences regarding accidents. Our employees were not fully safety-conscious and to instill safety into their minds, a series of safety meetings were inaugurated. These meetings were held at frequent intervals at the end of each shift.

EMIL BUELENS

During the course of these meetings, all known safety hazards were openly discussed by the workmen. Ways and means of eliminating hazards and hazardous conditions were suggested. These suggestions were **put into effect immediately** wherever they were practical.

After several of these mass safety meetings, a decision was made by the executive safety committee to hold a plant Safety Contest. This contest lasted six months, beginning on June 1, 1937, and ending on December 1, 1937. The plant was divided into two teams. Due consideration was given both teams regarding exposed man hours and hazardous conditions, these being as equally divided as possible. Captains were appointed from the various departments for their respective team.

Intense Rivalry for Prize

As an incentive a reward was offered to the winning team. This reward met with such a response that an actual rivalry existed between the two teams, with the result that both teams were tied with no lost-time accidents at the end of the contest. Inasmuch as both teams won, our Insurance Department in Cleveland promptly approved a suggestion that a banquet be given for the entire plant as a reward for the no lost-time accident record.

This banquet was held on January 8, 1938, and was as big a success as the safety contest. All employees and their wives or lady friends were invited. A gardenia corsage was given to every lady present and a seven-course dinner served to all in attendance. Short congratulatory speeches were made by our Manager, Mr. Brett, and by Mr. MacDonald of our Cleveland insurance department. After the speeches, dancing was enjoyed until one o'clock in the morning.

Safety Now a Kin

We wish to point out at this time the fact that since we have started these safety contests, the effect upon the employees has been such that they now carry safety as part of their work and mention the safety angle to their fellow employees when they do hazardous work.

We are now in our ninth month of no lost-time accidents and have completed 180,729 exposed man-hours. We hope to close this year with a clean slate and another banquet. — Emil Buelens, The Glidden Company, Chicago.

SIBBALD GETTING LARGEST CLEANER ORDER

Fred Sibbald, Superintendent of The Grand Trunk Pacific Elevator Company of Fort William, (operated by the Peavey grain interests,) writes that his Company has recently purchased and is now installing a battery of large capacity grain separators costing approximately $35,000, and having a capacity of 15,000 bushels per hour. This is reported to be the largest grain cleaner transaction of the sason.

"Our order which was placed with the Hart-Emerson Company of Winnipeg, the Canadian affiliate of the Hart-Carter Company, calls for a battery of the large size Hart Uni-flow Grain Separators; thus we are modernizing and increasing our grain cleaning facilities to the "nth degree."

Machines for New Terminal

The new Electric Steel Elevator workhouse of the Russell-Miller Milling Company, now under construction in Minneapolis also is to have four large-size Hart-Carter Grain Separators installed for both cleaning and grading. When completed there will be seven of the latest Hart-Carter terminal elevator machines in operation in this particular workhouse.

BROWN HEADS K. C. CHAPTER

Roy Browne, Assistant Superintendent of Davis-Noland-Merrill Grain Company's Santa Fe Elevator in Kansas City, Kansas, heads the Kansas City District Chapter for the coming year, succeeding T. C. Manning of Uhlmann Grain Company's Wabash and Katy elevators. (Mr. Manning is now National First Vice President.)

Supporting Mr. Browne, who was Chapter Secretary last year, is Charles F. Peterson of Simonds-Shields-Lonsdale Grain Company and W. C. Groseclose of Kellogg Grain and Elevator Corporation as Vice Presidents, and William Kamp of Ralston-Purina Company as Secretary-Treasurer.

New Directors include: E. I. Odell, Davis-Noland-Merrill Grain Company; H. J. Hixson, Continental Grain Company; Frank McDermott, Norris Grain Company; P. A. Kier, Southwestern Milling Company; Claude Darby, Simonds-Shields-Lonsdale Grain Company, and retiring President Manning.

Newly appointed to the Safety Committee are Claude Darby, and Frank Wilson of Norris Grain Company, in addition to these re-elected members: Harry Madison, Simonds-Shields-Lonsdale Grain Company; H. H. Kimberlin, Midland Flour Mills, and Cam Riley, Hart-Bartlett-Sturtevant Grain Company.

The Operator's Committee, designed to co-operate with the Managers on every item of mutual concern, is composed of Mr. Manning, Frank McDermott, and Roy Harp of Wolcott & Lincoln.

Secretary Kamp succeeds Roy Browne on the Program Committee, serving with E. D. Everett of Kellogg Grain & Elevator Corporation and Hugh King of Scoular-Bishop Grain Company.

Retiring President Manning sincerely thanked the Chapter for their splendid co-operation, suggested topics for future discussions and "urged us to carry on with consistent energy and to increase our membership."

Some sixty-eight attended the previous months' meeting, at which the wives were included.

EXPLOSION CODE SUPPLEMENT

C. J. Alger

Have you a little Dust Explosion Hazard Code (562) Supplement in your home? If not, it is Number 617, and is available from Dr. D. J. Price or from the Bureau of Labor Statistics, U. S. Department of Labor, Washington, D. C.

★

MEDICINE FOR SUCCESS

In an advertisement Mr. W. L. George, British writer, mentions five things that interfere with success. They are SHYNESS, IMPATIENCE, WORKING TOO HARD, which destroys originality, FORGETFULNESS and TALKING TOO MUCH!

★

"DO YOUR LOCAL FIREMEN KNOW?"

GILBERT LANE

For training firemen and to acquaint them with the hazards of explosions during fire fighting operations, Dr. David J. Price has available a 10-page illustrated circular (No. 385) awaiting your request.

Those who have seen it say it is worth while for the plant workmen as well.

★

WE MOVE UPWARD

The offices of this publication are now located in the Chicago Board of Trade, Suite 4105, just thirty-six floors above our old hide-out in the adjoining building.

One of our first visitors wise-cracked that moving as we did was one way to get up in the world, at least. Nevertheless, "C'umupun see us s'mtime."

★

Words of bitterness easily spoken come from a heart angered to hate, never from one someone has broken.

Field Warehousing
By Douglas-Guardian

A SHORT, QUICK, SOUND ROUTE TO NEEDED CAPITAL

Typical Commodities Field Warehoused

Grain and a great variety of grain products, Alcohol, Brewery products, Canned Goods, Cotton, Cotton products, Distillery products, Soy Beans and products, Flour, Feed, Cola, Lumber, Malt, Molasses, Rice Seeds, Starch, and many others.

BRINGS THE WAREHOUSE TO THE INVENTORY

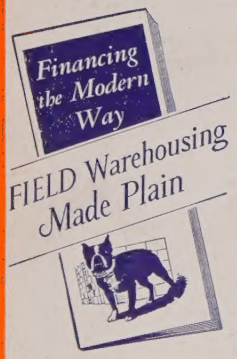
COLLATERAL WAREHOUSED ON PREMISES

The time of year is here or at hand when financial arrangements will be necessary in connection with the new crop. Field Warehousing enables you to raise immediate capital on grain, grain products and feed stuffs in storage, being held for a favorable market.

Warehouse receipts are issued, on which the bank loans money at a favorable rate of interest. As settlements are effected, the warehoused merchandise is released. Actually, the commodities are made to help finance themselves during the season that they are non-productive. Setting up and maintaining the Field Warehouse, issuing the warehouse receipts, and releasing the merchandise upon liquidation of same, is handled completely by the Douglas-Guardian organization in a manner pleasing both to the banker and the company operating in grain and grain products, and relieving both of the details.

WELL ESTABLISHED WITH BANKS

Since so many companies engaged in the grain and feed business have utilized Douglas-Guardian facilities during the past decade, we can give you the highest references. Financing through the medium of warehouse receipts is a sound and accepted basis of collateral by banks throughout the country. Being a national organization, we are well established with banks everywhere. We offer every facility for the legal and speedy arrangement for credit based on the field warehousing of your finished product as collateral.



Write or Wire for Full Details

It will be a pleasure to go into cases and show you how Field Warehousing would help solve your financial problem.

Through our thirteen strategically located offices, we are in position to give prompt attention to your inquiry, and, if a connection is made, to effect a field warehousing set-up in a prompt and efficient manner.

Write for FREE Copy

Glad to mail you this free booklet, covering the subject of Field Warehousing briefly but comprehensively. Address 100 W. Monroe St., Chicago, or nearest office.

Douglas-Guardian Warehouse Corp., G
100 West Monroe St., Chicago

Please send us your book, Financing the Modern Way.

Company Name _____

Address _____

Signed _____

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